

## 35-660 Exchanging rubber sleeves on rear axle shaft

A. Model 107, 114, 115, 116, 123, 126.02/03

### Lubricant for synchromesh joints

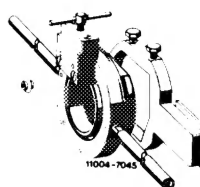
Model	Lubricant	Quantity in grams per joint		Remarks
		inside	outside	
107.022/023/025 107.042/043/045 114 115 116.02 123 126.02 126.032/033	Spider joint oil	230	230	Spider joint oil included in each "rubber sleeve repair kit"
107.024/026/044 <sup>1)</sup>				
107.046				
116.03				
126.036/037				
126.120 (USA)				
107 <sup>2)</sup> (USA)		230	230	

<sup>1)</sup> Model 107.044 (USA) installed starting chassis end no. 029599.

<sup>2)</sup> Model 107.044 (USA) installed up to chassis end no. 029598.

### Special tools

Cutting tool for opening  
protective sleeve



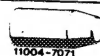
115 589 40 63 00

Beading tool for closing  
protective sleeve



115 589 36 63 00

Assembly sleeve for rubber sleeve



115 589 01 63 00

3-magnet ball holder for assembling balls



115 589 05 63 00

Clamping jaws for rear axle shaft

25-27 mm dia.

32 mm dia.



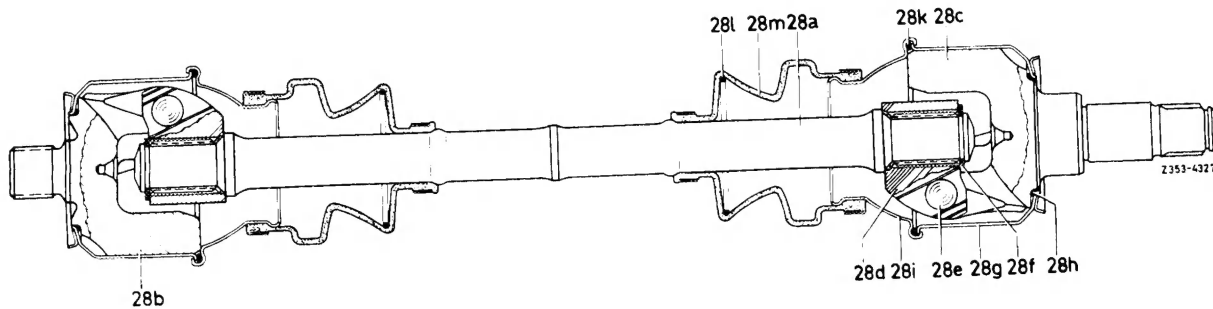
116 589 11 31 00

116 589 10 31 00

Installer and remover



116 589 15 15 00



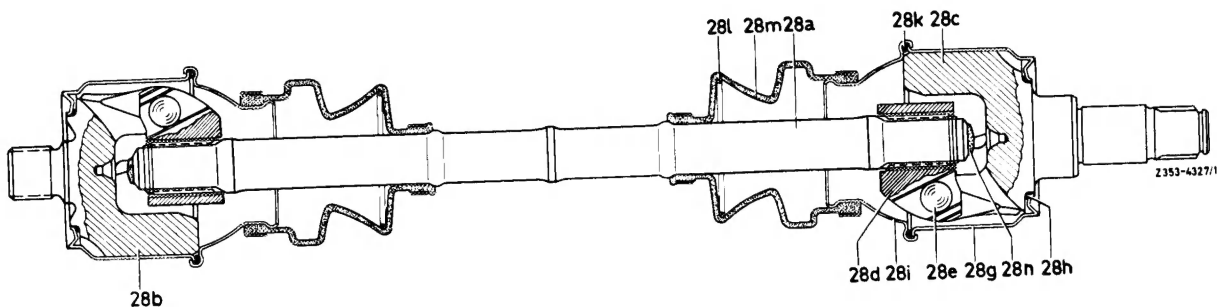
#### 1st version

28a Rear axle shaft  
28b Outer spider  
28c Inner spider

28d Spider joint hub  
28e Ball  
28f Locking ring

28g Protective sleeve  
28h Sealing ring  
28i Stop sleeve

28k Sealing ring  
28l Clamping ring  
28m Rubber sleeve



#### 2nd version

28a Rear axle shaft  
28b Outer spider  
28c Inner spider

28d Spider joint hub  
28e Ball  
28g Protective sleeve

28h Sealing ring  
28i Stop sleeve  
28k Sealing ring

28l Clamping ring  
28m Rubber sleeve  
28n Stop buffer

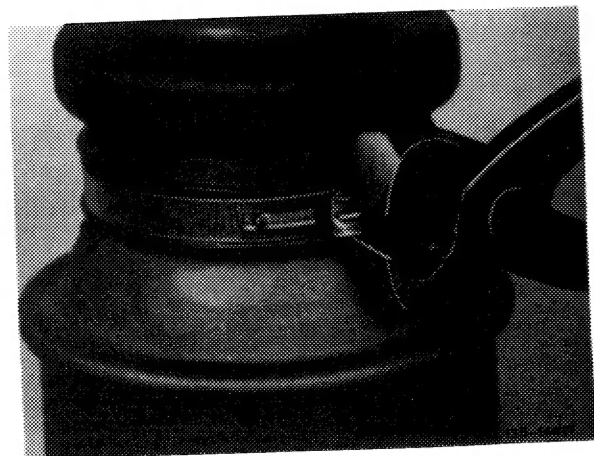
#### Note

The complete rear axle shaft can be individually removed (35–620). If the sleeves are replaced on both rear axle shafts, removal together with rear axle center piece (35–520) is recommended.

The rubber sleeve of rear axle shaft with large inner joint can be renewed only after disassembly of small joint. If the large inner joint is leaking e.g. between protective sleeve and spider or on bead between protective sleeve and stop sleeve, the complete rear axle shaft must be renewed, since no cutting and beading tool is available for the protective and stop sleeve of the large joint.

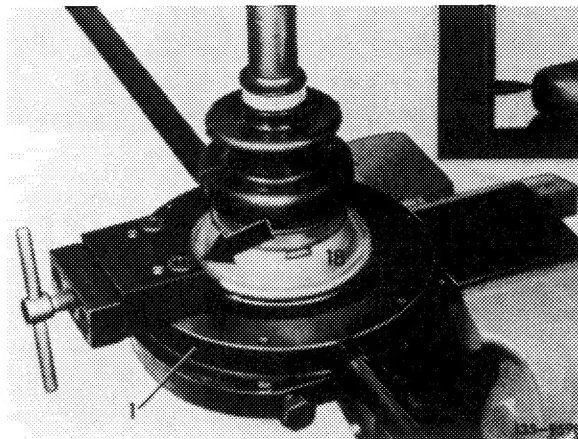
#### Disassembly

1 Loosen hose clamps and remove. Open hose clamps without clamping screw at tensioning eye by means of cutting pliers.



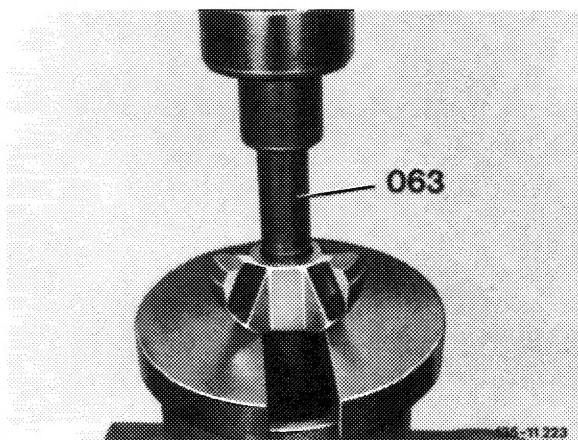
2 Slide back rubber sleeve and drain spider joint oil.

3 Open stop sleeve (18) of synchromesh joint at beaded edge by means of a cutting tool, via setting cutting wheel to center of bead and exerting slight pressure against stop sleeve (arrow).



4 Pull protective sleeve from spider and remove spider from spider joint hub together with 6 balls.

5 Remove locking ring, if installed, from groove in rear axle shaft and press spider joint hub from rear axle shaft by means of removing mandrel (063).



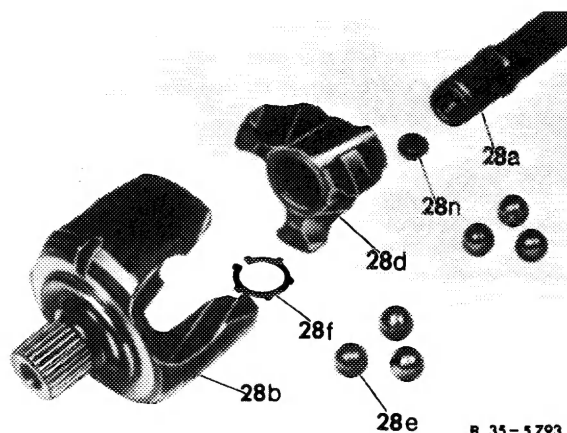
6 Pull stop sleeve and rubber sleeve from rear axle shaft.

**Note:** The second rubber sleeve can now be pulled off after loosening hose clip over disassembled end of rear axle shaft, if required. Make sure that none of the lubricant is getting lost and that no dirt is entering inside joint.

7 Carefully clean disassembled joint.

8 Check ball races of spider joint hub and spider as well as balls for wear. If these parts are badly worn, renew complete rear axle shaft.

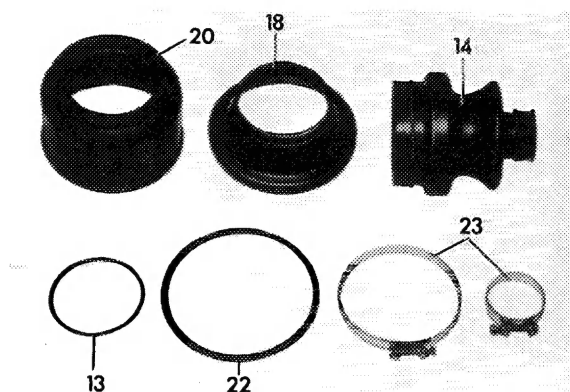
- 28a Rear axle shaft
- 28b Spider
- 28d Spider joint hub
- 28e Ball
- 28f Locking ring (1st version only)
- 28n Stop buffer



R 35-5793

**Note:** For changing sleeves, a repair kit with all required parts is available. If the same rear axle shaft requires a second sleeve, use an additional repair kit comprising a rubber sleeve and two hose clips.

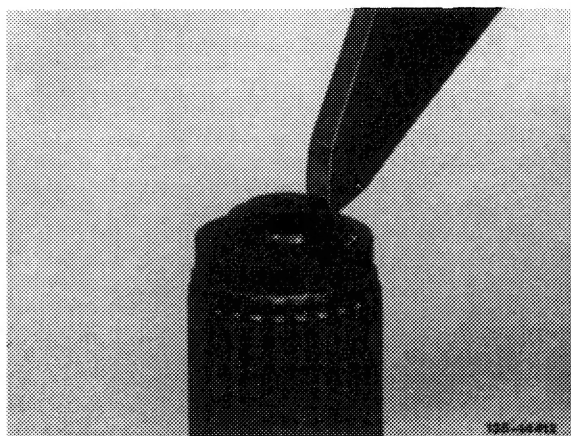
- 13 Sealing ring
- 14 Rubber sleeve
- 18 Stop sleeve
- 20 Protective sleeve
- 22 Sealing ring
- 23 Hose clip



R-3478

9 Check stop buffer for damage. Renew badly distorted stop buffers.

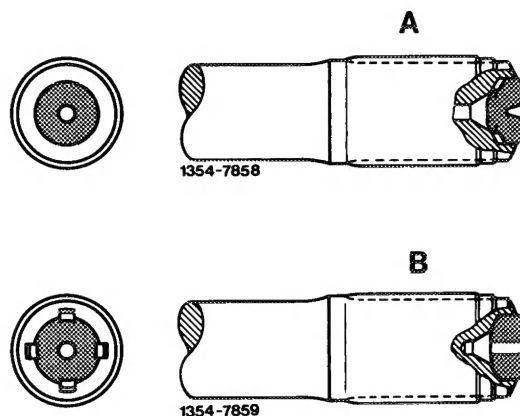
10 Split stop buffers with suitable tool into two parts and then remove.



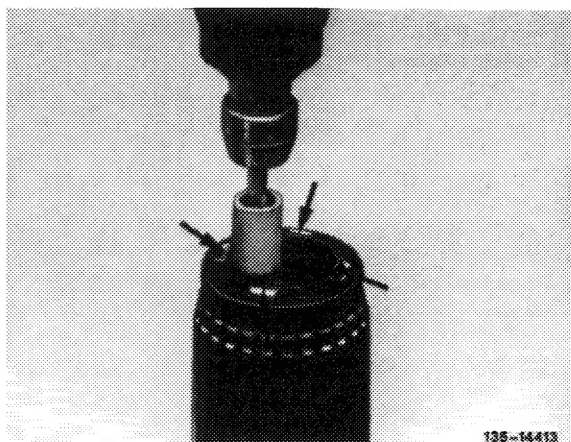
## Assembly

11 Push-in stop buffer with holding spring up to contact surface.

- A = 1st version with holding spring and repair solution
- B = 2nd version without holding spring, peened — series version



**Note:** Only stop buffers with holding spring (A) are available as spare parts. On rear axle shafts of 2nd version first remove dents caused by peening from inside by means of a grinder.

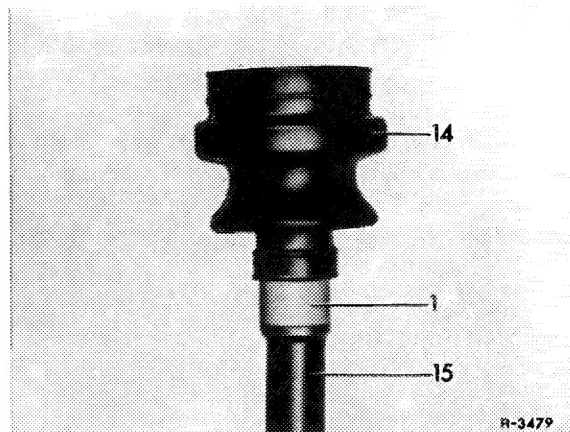


135-14413

12 Place assembly sleeve (1) on splining of rear axle shaft (15).

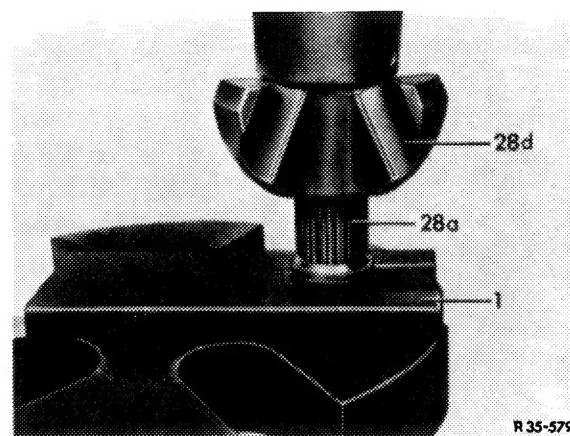
13 Slip new rubber sleeve (14) on rear axle shaft.

14 Attach new stop sleeve over rear axle shaft.



15 Position clamping device (1) against sleeve flange of rear axle shaft.

16 Press on spider joint hub (28d) of 1st version up to stop surface of rear axle shaft.



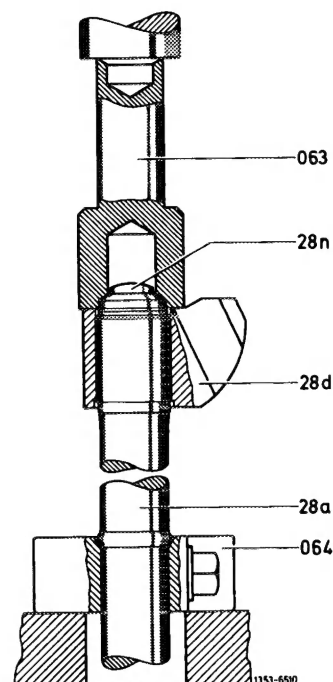
17 Press on spider joint hub (28d) of 2nd version (without stop surface) by means of installing mandrel (063) until mandrel rests against cone of rear axle shaft.

**Attention!**

The minimum pressure of the joint hub against rear axle shaft should amount to **5000 N**.

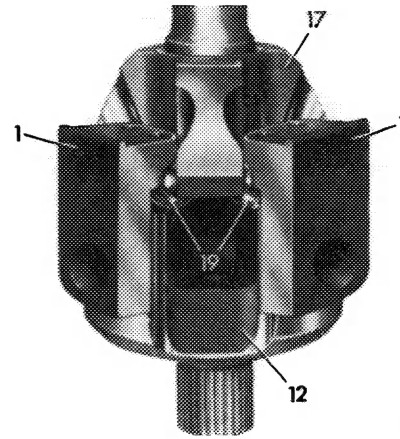
18 Mount locking ring, if installed. (Starting Jan. 1973, the locking ring will no longer be installed).

28a Rear axle shaft  
28d Spider joint hub  
28n Stop buffer  
063 Removing and installing mandrel  
064 Clamping device



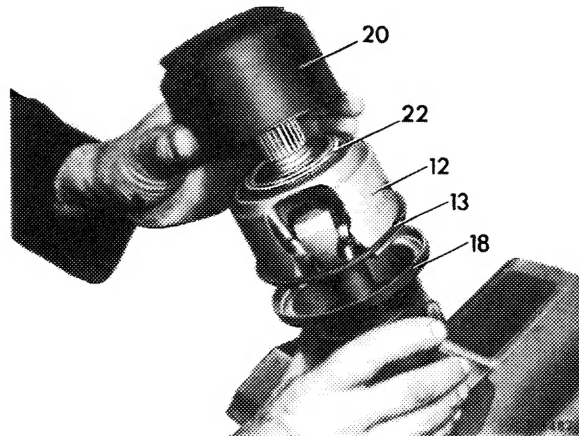
19 Assemble spider (12), the six balls (19) and the spider joint hub (17) with the aid of three magnetic ball holders (1).

**Note:** When new, the balls are mounted with a slight overlap. In used joint, balls and spider are moving somewhat easier. The rear axle shaft is completely replaced only whenever torsional play is showing up.

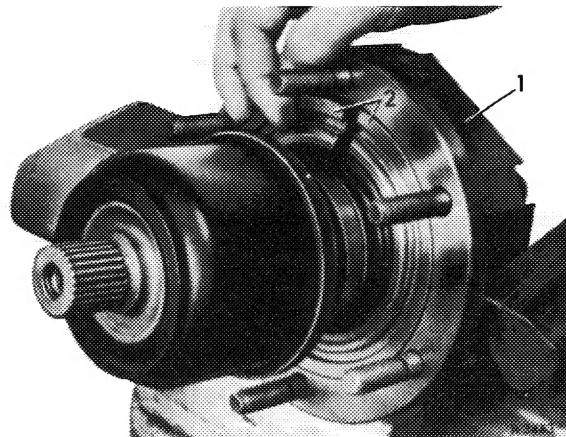


135 - 6 279/1

20 Place new sealing rings (13 and 22) on spider (12) and attach new protective sleeve (20).

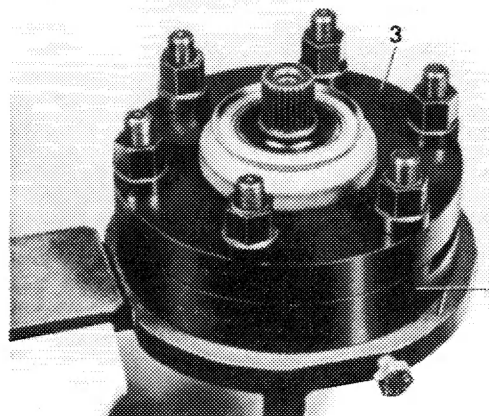


21 Introduce rear axle shaft completely into beading tool (1) and insert split mounting ring (2).



22 Mount beading ring (3) and screw in hex nut up to bead ring. Then tighten hex nut uniformly cross-wise until bead ring rests against beading device (1).

23 Remove rear axle shaft out of beading tool.

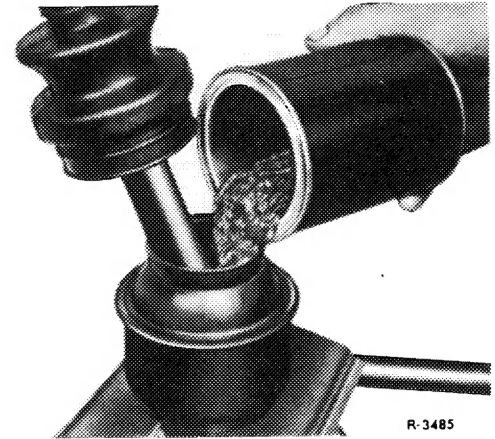


135-9588

24 Fill synchromesh joint with spider joint oil.

**Attention!**

Use specified lubricant only in specified quantity.



25 Attach rubber sleeve on stop sleeve and on rear axle shaft with new hose clips, while sliding sleeve up to bead machined on rear axle shaft.

**Note:** The screws of the two hose clips on one sleeve should always point in one direction. Align the screws of both hose clips on second sleeve of a rear axle shaft each turned by 180°.

